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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,666	01/16/2004	Junaid Ahmed Siddiqui	06406 USA	8596
23543	7590	07/28/2005	EXAMINER	
AIR PRODUCTS AND CHEMICALS, INC. PATENT DEPARTMENT 7201 HAMILTON BOULEVARD ALLENTEWON, PA 181951501			MARCHESCHI, MICHAEL A	
		ART UNIT	PAPER NUMBER	1755

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/759,666	SIDDQUI, JUNAID AHMED	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael A. Marcheschi	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
  - 4a) Of the above claim(s) 17-26 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 and 27 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/16/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: ____                                     |

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-16 and 27, drawn to a composition, classified in class 51, subclass 307.
- II. Claims 17-26, drawn to method, classified in class 438, subclass 690.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, (1) the process for using the product as claimed can be practiced with another materially different product, such as one that does not have a catalyst associated with it and (2) the product as claimed can be used in a materially different process of using that product, such as polishing a substrate that does not contain one of the claimed members.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Geoffrey L. Chase on 6/13/05 a provisional election was made with traverse to prosecute the invention of group I, claims 1-16 and 27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-26 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

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Claims 2, 12-16 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 12 are indefinite as to the limitation "is adapted to" because this does not define the claimed invention in a definite manner, thus rendering the scope of the claims unclear. What does this encompasses and how is it adapted?

Claim 27 is indefinite as to the scope of "substantially free of" because the examiner is unclear as to what this encompasses, thus rendering the scope of the claim unclear.

The other claims are indefinite because they depend on an indefinite claim.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 12-15 and 27 are rejected under 35 U.S.C. 103(a) as obvious over Small et al. (495).

Small et al. teach in the abstract and sections [0019]-[0045], a composition comprising abrasive particles (section [0023] implies that the abrasive (silica) is colloidal) having a surface at least partially coated with a catalyst not of the groups specified (coated encompasses bonded), hydrogen peroxide and deionized water. Section [0029] implies that mixtures of catalysts can be used.

The reference teaches that the abrasive can be coated with a catalyst not of the groups defined in the abstract and claim 1 and although the reference does not literally define that mixtures of catalysts can be used for the broad disclosure of the catalysts defined in the abstract and claim 1, the reference, when defining specific catalysts, as in section [0029] states that mixtures can be used. In view of this, it is the examiners position that one skilled in the art would have known and found it obvious, from the teachings of section [0029], that mixtures of the broad catalysts defined in the abstract and claim 1 can be used and are within the scope of the reference teachings. This is apparent because “a reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In view of this, it is the examiners position, that from section [0029], one can reasonable infer that mixtures of the broad catalysts defined are within the scope of the reference absent specific evidence to the contrary. In the alternative, it is *prima facie* obvious to combine two or more materials (catalysts) disclosed by the prior art to form a third material (mixture of catalysts) that is to be used for the same purpose. *In re Kerkhoven* 205 USPQ 1069. With

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mixtures of catalysts being apparent and/or obvious, one can see that the possible metal materials used (ones not belonging to the groups specified) for the catalyst can encompass the claimed materials (claimed catalyst and stabilizer materials are encompassed by the reference metals because they do not belong to the groups defined in the reference). Although the reference does not define these as stabilizers, no distinction is seen to exist because, irrespective of what they are called and used for (function), they are still known to be used to coat an abrasive. In addition, the metals used are the same and the same metals, when used in the same manner (coating abrasive particles), are expected to function the same absent evidence to the contrary. In summary, the teaching of metal not from groups 4b, 5b and 6b encompasses the claimed metals and combinations thereof.

Claims 1, 4, 5, 6, 8, 11 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Grunwald (710).

Grunwald teaches in column 2, lines 21-24, column 2, lines 37-39, column 3, lines 43-45 and column 4, lines 34-63), a composition comprising abrasive agent (column 4, lines 34-63 implies that the abrasive (silica) is colloidal) having a surface coated with at least one metal (reads on a mixture of metals) selected from Fe and W (although the reference defines Wo one skilled in the art would know that this really should be W). The abrasive agent can be incorporated into CMP slurries.

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises an abrasive agent (colloidal silica) being coated with the claimed metals. Although the reference does not define these as stabilizers, no distinction is seen to exist

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because, irrespective of what they are called and used for (function), they are still known to be used to coat an abrasive. In the alternative, no significant distinction is seen to exist between the reference and the claimed invention because the metals used are the same and the same metals, when used in the same manner (coating abrasive particles), are expected to function the same absent evidence to the contrary.

Claims 2, 3, 12, 13 and 16 are rejected under 35 U.S.C. 103(a) as obvious over Grunwald (710) in view of Small et al. (495).

The primary reference fails to teach the oxidizer and deionized water.

With respect to the deionized water, the primary reference states that the abrasive agent is used in CMP slurries, and CMP slurries are known to use deionized water, as the medium, as shown by the secondary reference, thus the use of deionized water to form a slurry of the primary reference is well within the scope of the skilled artisan.

With respect to the oxidizer, the primary reference states that the abrasive agent is used in CMP slurries, and CMP slurries are known to incorporate an oxidizer (hydrogen peroxide), as shown by the secondary reference, thus the incorporation of an oxidizer to form a CMP slurry of the primary reference is well within the scope of the skilled artisan.

Claims 2, 3, 12, 13 and 16 are rejected under 35 U.S.C. 103(a) as obvious over Mueller et al. (288) in view of Grunwald (710).

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Mueller et al. (288) teach in column 4, lines 46-53, column 6, lines 15-20 and column 7, lines 30-33, a polishing composition comprising an abrasive, hydrogen peroxide and deionized water.

Although the primary reference does not teach the claimed abrasive agent, it is the examiners position that one skilled in the art would have found it obvious to substitute one known abrasive material, as shown by the secondary reference, for another that is to be used for the same purpose because this concept is clearly within the scope of the skilled artisan. In addition, the secondary reference teaches that the coated abrasive agent, when used in a CMP slurry, will produce a more uniform and stable dispersion, thus providing motivation for the above substitution because any material which will improve CMP slurries is within the scope of the skilled artisan in order to optimize the dispersion, thus optimizing the polishing performance.

Claims 1-16 and 27 are rejected under 35 U.S.C. 103(a) as obvious over Mueller et al. (288) in view of Small et al. (495).

Mueller et al. (288) teach in column 4, lines 46-53, column 6, lines 15-20 and column 7, lines 30-33, a polishing composition comprising an abrasive, hydrogen peroxide and deionized water. Column 5, lines 23-35 define that the composition can contain at least one catalysts, wherein the catalyst is a metal that has multiple oxidation states).

Although the primary reference does not literally define that the catalyst is coated on the abrasive particles, this concept is an obvious modification thereof and therefore obvious to the skilled artisan because the secondary reference clearly shows that catalysts are generally known to be coated onto abrasive particles when used in CMP slurries. The motivation to coat the

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particles with the catalyst stems from catalyst coating of abrasive particles being known in the art as a way to incorporate catalysts into the composition. Any known way to incorporate catalysts into CMP composition is therefore within the scope of the skilled artisan. With respect to the metals (catalysts) used in the primary reference, the reference teaches all but Al, B, and W, however, the reference clearly states that the at least one catalyst is a metal that has multiple oxidation states and is not limited to the ones defined. Since Al, W and B have multiple oxidation states, it is the examiners position that they are within the scope of this reference. With respect to the mixture of metals, the reference states "at least one", thus reading on a mixture. Although the primary reference does not define these as stabilizers, no distinction is seen to exist because, irrespective of what they are called and used for (function), they are still known to be used to coat an abrasive (coating aspect being obvious see above). In addition, the metals used are the same and the same metals, when used in the same manner (coating abrasive particles), are expected to function the same absent evidence to the contrary.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

**A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference**

**can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.**

**A generic disclosure renders a claimed species *prima facie* obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971).**

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548.

Evidence of unexpected results must be commensurate in scope with the subject matter claimed.

*In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. ***In re Hill* 284 F.2d 955, 128 USPQ 197 (CCPA 1960).**

The additional references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections.

Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-12331233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM  
7/05

Michael A Marcheschi  
Primary Examiner  
Art Unit 1755